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ABSTRACT

Alternate measures of both job structural attribute preferences and intrinsic versus extrinsic orientation to sources of job rewards were investigated with a view toward assessing instrument properties and providing direction for future improvement of such measures. Analysis indicated that different measures of intrinsic and extrinsic orientation were neither operationally nor conceptually equivalent. In addition, generally low relationships were found to exist among different measures of preference for job structural attributes. Contrary to previous assumptions in the literature, individual preferences for such job attributes as variety, learning new skills, responsibility, etc. were found to be significantly and differentially related to individual job related abilities, interests and value orientations. (Author/MV)

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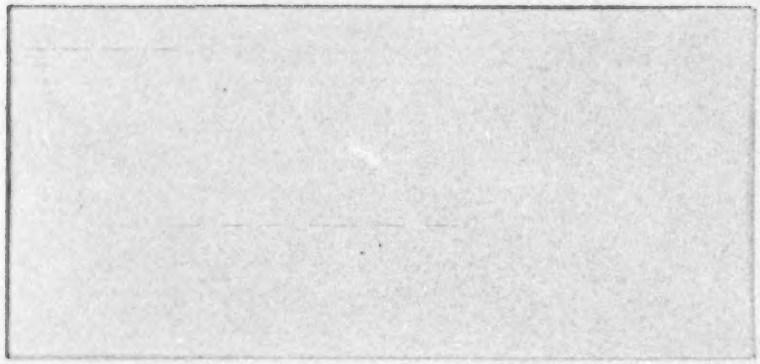

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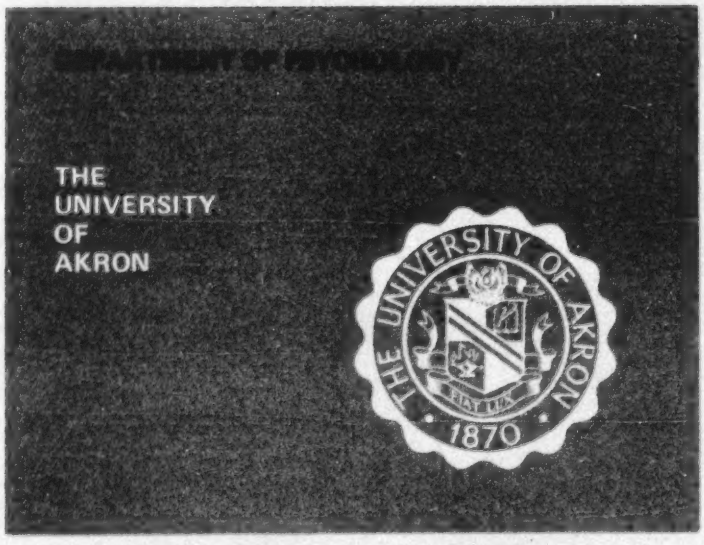

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Technical Report #7

The Relationships Among Measures of Work Orientation, Job Attribute Preferences, Personality Measures, and Abilities

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Analysis indicated that different measures of intrinsic and extrinsic orientation were neither operationally nor conceptually equivalent. In addition, generally low relationships were found to exist among different measures of preference for job structural attributes. Contrary to previous assumptions in the literature, individual preferences for such

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job attributes as variety, learning new skills, responsibility etc. were found to be significantly and differentially related to individual job related abilities, interests and value orientations.

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Introduction

Previous research on the structural attributes of tasks has focused mainly on higher order need strengths (Turner & Lawrence, 1965; Hackman & Lawler, 1971). It appears that these approaches converge in their emphasis on the intrinsic factors of jobs. For example, in the development of the intrinsic scale of the Job Orientation Inventory (Blood, 1973) one of the items intended to measure responsibility is concerned with a respondent's liking a job with more responsibility.

One of the primary elements of an ongoing series of job design studies concerns the complex interrelationships among the described and preferred structural attributes of the job as perceived by job incumbents, individual differences in value orientations toward work, and individual differences in task related abilities (Barrett, Forbes, Alexander, O'Connor, & Balascoe, 1975; Barrett, O'Connor, Alexander, Forbes, & Balascoe, 1975).

Two instruments of quite different format were used in the present study to measure individual preferences for the structural attributes of jobs. The first of these was the Work Itself-Work Environment Questionnaire (Cascio, 1973). This instrument was developed to provide a comprehensive inventory

of discriminably different job elements and an index of the extent to which each element was preferred by the respondent in real jobs. Properties of the job itself, such as feedback, variety, and responsibility, as well as properties of the environment surrounding work performance, such as salary, and company policy, are measured.

The second instrument used to measure preferences for job structural attributes was the Attribute Preference Scale (Barrett, Forbes, Alexander, O'Connor, & Balascoe, 1975; Barrett, O'Connor, Alexander, Forbes, & Balascoe, 1975). A set of job descriptions are provided to the respondent with each description containing a statement regarding the presence or absence of each of several attributes. The respondent sorts the job descriptions into a rank order of preference for the described jobs.

Three instruments were used in the present study to measure value orientation. These were the Job Attitude Scale (Saleh, 1964), the Survey of Work Values (Wollack, Goodale, Wijting, & Smith, 1971), and the Job Orientation Inventory (Blood, 1969). Although each of the above instruments contain factors which have been used to measure intrinsic and extrinsic orientation, their respective developments are based on different conceptual and theoretical models.

Saleh's (1964) development of the Job Attitude Scale is an outgrowth of Herzberg's (1966) two-factor theory of work motivation. In essence this theory states that individuals have two sets of needs (viz., psychological growth and avoidance of pain) which are relatively independent of each other. It is, therefore, hypothesized that job satisfaction is a function of "satisfiers" or "motivators" which are related to the "nature of the work itself" and the rewards following directly from such performance, whereas job dissatisfaction is a function of "dissatisfiers" which are associated with the context or environment within which an individual performs his work. These satisfiers and dissatisfiers have been respectively called intrinsic and extrinsic factors.

Based on this conceptualization, Saleh (1964) postulated that intrinsically oriented employees would emphasize such factors as achievement, responsibility, and personal growth whereas extrinsically oriented employees would concentrate on factors such as company policy and supervision. The instrument was developed such that the intrinsic factors and extrinsic factors were paired in a forced choice format. Scoring is done by tabulating the number of times an extrinsic factor is chosen over an intrinsic or vice versa. The resulting scale values, an intrinsic and an extrinsic score, are ipsative in nature.

Another ipsative instrument which is conceptually similar to the job enrichment work of Turner and Lawrence (1965) is the Job Orientation Inventory (Blood, 1969; 1973). According to Blood, each individual responds to a work situation according to his own personal comparative reward hierarchy rather than according to some absolute level of a factor in reference to other individuals. Thus, Blood feels that since the dynamics of work orientation are intrinsically ipsative, they should be measured in such a way as to preserve that personal comparison.

The ten dimensions of the instrument were derived by reviewing the emphasis placed on dimensions used by other researchers concerning work values, job satisfaction, and human needs. The forty-five pairs of statements on the Job Orientation Inventory emphasize the potential rewards an individual can expect from his work rather his work values per se, a distinction which seems arbitrary at best. Although the instrument was not explicitly developed to measure intrinsic and extrinsic factors, research has indicated the reasonableness of these second order factors.

The Survey of Work Values (Wollack, et al. 1971) differs from the above two measures in that it is a normative measure. It is based on a number of dimensions of the secularized "Protestant Work Ethic" (i.e., the idea that work is its own

reward) and emphasizes the meaning that an individual ascribes to his work role. It also differs from the other two measures in that the emphasis is placed on the work group for the development of the intrinsic ("job involvement") scale. Furthermore, the Survey of Work Values differs in its relative lack of emphasis on multiple subscales for measuring extrinsic orientation. Only attitudes towards earnings and the social status of the job are included on this scale as opposed to ten subscales for extrinsic orientation on the Job Attitude Scale.

In summary, the communality among the three instruments stems from their attempts to measure the intrinsic versus extrinsic factors associated with work. However, all three have a different conceptual and definitional emphasis and therefore, the question of interest concerns the degree of conceptual and empirical equivalence of the constructs measured by the different instruments.

A fourth instrument which is closely related to the above mentioned measures is the Protestant Ethic Questionnaire (Blood, 1969). This eight-item scale attempts to measure both positive and negative attitudes toward the protestant work ethic. Using a component factor analysis and a varimax rotation, Blood (1969) demonstrated a two-factor solution in agreement with these two dimensions.

The primary focus of this report concerns the relationships between preferences for certain job structural attributes and individual abilities, interests, and value orientation. A related question has to do with the congruence of attribute preferences and value orientations as measured by fundamentally different instruments. In addition, past research has shown that the sex of the respondents has been a factor relevant to their scores on personality, ability, and aptitude tests. A reasonable mechanism by which these differences are developed and displayed would be the differential child rearing practices and consequent role differentiation. It would seem reasonable to assume that such differences may appear in measures of orientation, value, attitudes, preferences, or motivation.

The questionnaire and test data were analyzed in order to determine: 1) the construct validity of preferences for job structural attributes measured with two different instruments, 2) the construct validity of measures of intrinsic and extrinsic orientation from these different instruments, and 3) whether or not systematic differences occur between sexes on scores on any of the variables.

Method

Research Setting and Subjects

The subjects were 59 male and 59 female students from the University of Akron, who volunteered to participate in a moni-

toring or a maintenance simulation experiment for $2.00 per hour. Subjects were solicited by an ad in the school newspaper. Prior to their involvement in the research, each subject underwent approximately four hours of testing of which the following instruments provided the data for this analysis:

1) The Wesman Personnel Classification Test (Wesman, 1965)
2) The Group Embedded Figures Test (Witkin, Oltman, Raskin, & Karp, 1971)
3) The Orientation Inventory (Bass, 1967)
4) The Maudsley Personality Inventory (Knapp, 1962)
5) The Rod-and-Frame Test (Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954)
6) The Attribute Preference Scale (Barrett, Bass, O'Connor, Alexander, Forbes, & Cascio, 1975)
7) The Protestant Ethic Questionnaire (Blood, 1969)
8) The Survey of Work Values (Wollack et al., 1971)
9) The Biographical Information Blank (Barrett, Bass, O'Connor, Alexander, Forbes, & Cascio, 1975)
10) The Job Orientation Inventory (Blood, 1973)
11) The Job Attitude Scale (Saleh, 1964)
12) The Work Itself/Work Environment Preference Questionnaire (Barrett, Bass, O'Connor, Alexander, Forbes, & Cascio, 1975)
13) The Picture Arrangement Test (Tomkins & Miner, 1957)

All of the above tests were administered and scored according to standard procedures recommended by the publisher or developer.

Results

The total test battery administered to these subjects resulted in scores for each participant on each of 86 variables. Means and standard deviations were computed on each variable for the total sample, and for the male and female samples separately. Statistical comparisons (t-test of means) were then made between

sexes on each of the variables. Those results are summarized in Table 1. As can be seen from inspection of that data, significant differences were found between males and females on 11 of the 86 variables. Females were lower in numerical ability as measured by the Wesman Personnel Classification Test ($\underline{t}(116) = 2.54$ $\underline{p} < .01$) and were more field-dependent on the Rod-and-Frame Test ($\underline{t}(116) = 2.25$, $\underline{p} < .05$). Females also expressed more agreement with the protestant work ethic than did males ($\underline{t}(116) = 2.12$, $\underline{p} < .05$). Of the six scales in the Survey of Work Values, females responded as having a greater activity preference ($\underline{t}(116) = 2.57$, $\underline{p} < .01$), more pride in work ($\underline{t}(116) = 2.86$, $\underline{p} < .005$), and as being more intrinsically oriented ($\underline{t}(116) = 3.10$, $\underline{p} < .005$). Of the ten scales from the Job Orientation Inventory, females showed a higher orientation than males toward job security ($\underline{t}(116) = 2.14$, $\underline{p} < .05$) and a lower orientation toward providing for family ($\underline{t}(116) = 2.48$, $\underline{p} < .05$). Finally, of the 20 scales of the Work Itself/Work Environment Questionnaire, females expressed a greater preference for tasks that require attention ($\underline{t}(116) = 2.66$, $\underline{p} < .01$), provide task identity ($\underline{t}(116) = 2.17$, $\underline{p} < .05$) and work scheduling ($\underline{t}(116) = 2.35$, $\underline{p} < .05$).

Measures of preference for job structural attributes were investigated for consistency and for relationships with other individual differences. Preferences for six job structural

Table 1

Measures of Central Tendency and Dispersion:

Total Sample and by Sex

Variable		Males (N=59) $\bar{X}$	Males (N=59) SD	Females (N=59) $\bar{X}$	Females (N=59) SD	Total (N=118) $\bar{X}$	Total (N=118) SD
Ability Measures							
Wesman	-Verbal	26.31	6.52	25.85	5.89	26.08	6.19
	-Numeric	13.51	4.43	11.44	4.42	12.48	4.52**
	-Total	39.81	9.53	37.29	8.81	38.55	9.22
Rod-and-Frame Test		3.79	3.37	5.64	5.33	4.72	4.54*
Embedded Figures Test	-Raw	13.22	4.68	11.92	4.98	12.57	4.86
	-Reciprocal	.37	.33	.39	.35	.38	.34
Personality & Interest Measures							
Maudsley Personality Inventory	-Extroversion	27.71	9.49	27.69	8.86	27.70	9.14
	-Neuroticism	24.48	12.00	27.38	11.06	25.92	11.59
Picture Arrangement Test	-Dependence	6.07	3.08	7.21	4.22	6.63	3.71
	-Sociophilia	10.67	3.33	10.32	3.70	10.50	3.51
	-Self-Confidence	9.93	5.62	9.93	4.45	9.93	5.05
	-Happiness	3.60	4.07	3.98	3.92	3.79	3.98
	-Low Aggression	3.31	2.70	3.52	2.97	3.41	2.83
	-Work Failure	9.17	3.49	9.27	3.75	9.22	3.60
	-Negative Work Attitude	8.81	5.71	7.84	5.01	8.33	5.37

Table 1 (continued)

Variable		Males $\bar{X}$	Males SD	Females $\bar{X}$	Females SD	Total $\bar{X}$	Total SD
Biographical Information Blank	-Career Motivation	5.71	1.00	5.59	.70	5.65	.86
	-Personal Relations	5.34	1.60	5.75	1.27	5.54	1.45
	-Personal Effort	2.30	1.57	2.52	1.37	2.41	1.47
	-Self-Confidence	5.34	2.45	4.75	2.47	5.04	2.47
Value Orientation & Preference Measures							
Attribute Preference Scale	-Variety	44.34	10.70	44.42	8.22	44.38	9.50
	-Responsibility	41.24	10.29	42.27	11.23	41.75	10.74
	-Learning New Skills	57.04	9.55[a]	54.94	10.74[c]	55.85	10.21[e]
	-Feedback	42.89	9.42[a]	44.35	9.12[c]	43.72	9.20[e]
	-Complexity	35.85	12.79[b]	35.48	13.82[d]	35.69	13.13[f]
	-Independence	48.52	13.34[b]	49.68	9.61[d]	49.02	11.79[f]
Protestant Ethic Questionnaire	-Pro	14.41	3.64	15.68	2.75	15.05	3.27*
	-Con	14.86	3.73	14.97	3.15	14.92	3.43
Orientation Inventory	-Self	23.92	6.60	23.95	5.43	23.93	5.70
	-Other	27.86	6.60	26.58	5.98	27.22	6.31
	-Task	28.49	6.87	29.22	6.31	28.86	6.58
Survey of Work Values	-Learning	26.48	5.93	26.90	5.94	26.67	5.91
	-Social Status	24.75	5.79	24.44	5.50	24.59	5.62
	-Upward Striving	34.34	6.10	34.25	5.18	24.30	5.64
	-Activity	38.83	6.08	41.31	4.19	40.06	5.36**
	-Job Involvement	41.56	4.25	42.56	4.14	42.06	4.21
	-Pride in Work	44.10	5.09	46.63	4.48	45.36	4.94***
	-Intrinsic Orientation	124.49	12.61	130.86	9.44	127.65	11.55***
	-Extrinsic Orientation	51.22	9.66	51.34	9.46	51.28	9.52
	-Intrinsic versus Extrinsic	15.89	6.54	17.84	6.53	16.85	6.58

Table 1 (continued)

Variable		Males $\bar{X}$	Males SD	Females $\bar{X}$	Females SD	Total $\bar{X}$	Total SD
Job Attitude Scale	-Intrinsic	30.59	11.79	32.29	8.11	31.44	10.11
	-Extrinsic	29.41	11.79	27.71	8.11	28.56	10.11
Job Orientation Inventory	-Achievement	5.26	2.04	5.36	1.59	5.31	1.82
	-Responsibility	4.53	1.70	4.02	1.58	4.28	1.66
	-Growth	6.81	1.55	7.31	1.52	7.06	1.55
	-Recognition	2.29	2.12	2.12	1.62	2.21	1.88
	-Status	2.78	1.58	2.72	1.61	2.75	1.59
	-Interpersonal Relations	5.05	2.17	4.88	1.80	4.97	1.99
	-Pay	4.16	1.89	4.26	1.68	4.21	1.78
	-Job Security	3.97	1.87	4.79	2.12	4.38	2.03*
	-Provide for Family	4.02	2.31	3.09	1.89	3.55	2.16*
	-Hobbies	6.14	2.30	6.31	1.87	6.22	2.09
	-Intrinsic Orientation	18.90	3.92	26.05	3.10	26.08	3.52
	-Extrinsic Orientation	26.10	3.92	26.05	3.10	26.08	3.52
Work Itself/ Work Environment Preference Questionnaire	-Variety	3.95	.88	3.87	.87	3.91	.87
	-Attention	2.99	1.07	3.48	.88	3.24	1.01**
	-Learning New Skills	3.55	1.02	3.62	.98	3.59	1.00
	-Task Identity	4.07	.80	4.36	.63	4.21	.73*
	-Internal Feedback	4.29	.71	4.37	.72	4.33	.71
	-Independence	3.81	1.16	4.00	.74	3.90	.98
	-Responsibility	4.16	.81	4.28	.49	4.22	.83
	-Order	4.05	.86	4.17	.81	4.11	.83
	-Goal Clarity	4.32	1.01	4.56	.67	4.44	.86
	-Job Difficulty	3.92	1.08	3.71	1.08	3.81	1.08
	-Job Complexity	3.53	.75	3.46	.63	3.50	.69
	-Decision Making	3.85	.73	3.80	.79	3.82	.76
	-Intrinsic Interest	4.48	.95	4.62	.66	4.55	.82
	-Intrinsic Motivation	3.32	1.21	3.45	1.26	3.39	1.23

Table 1 (continued)

Variable	Males $\bar{X}$	Males SD	Females $\bar{X}$	Females SD	Total $\bar{X}$	Total SD
-Pay	3.46	.93	3.18	.58	3.32	.79
-External Feedback	3.43	.94	3.48	.78	3.46	.86
-Physical Working Conditions	4.21	.90	4.32	.58	4.26	.76
-Administrative Working Conditions	4.23	.95	4.25	.75	4.24	.85
-Work Scheduling	2.79	.85	3.09	.48	2.94	.70*
-Job/Person Fit	4.53	.86	4.76	.56	4.65	.73

* $p < .05$.
** $p < .01$.
*** $p < .005$.
} Significant difference between Males and Females--two-tailed test.

[a] $n = 26$.
[b] $n = 33$.
[c] $n = 34$.
[d] $n = 25$.
[e] $n = 60$.
[f] $n = 58$.

attributes were measured by both the Attribute Preference Scale and by the Work Itself/Work Environment Questionnaire. Assessment of these two sets of preference measures was made by correlating each preference measure with the other ability, personality, and value orientation measures which were taken during the study. Table 2 presents a summary of the results of this analysis for the two alternative measures of preference for variety as a job structural attribute. Inspection of those findings shows that preference for variety as measured by the Attribute Preference Scale is positively related to verbal intellectual ability and general intellectual ability (both as measured by the Wesman Personnel Classification Test) and is negatively associated with extrinsic work factors such as providing for the family and preference for pay.

That same table shows a similar pattern of associations for preference for variety as measured by the Work Itself/Work Environment Questionnaire. For example, not only is such a preference positively associated with general intellectual ability, but is also associated with a field-independent perceptual style (as measured by both the Rod-and-Frame Test, and the Embedded Figures Test) and is associated negatively with the more global factors of extrinsic orientation both from the Survey of Work Values and the Job Orientation Inventory.

Table 2

Correlations[1] of Two Alternative Measures of Preference For Variety with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[2]	
Variable	r	Variable	r
Ability Measures			
Wesman - Verbal	.25**	Wesman - Total	.40***
Wesman - Total	.23*	Rod-and-Frame Test	-.18*
		Embedded Figures Test	-.39***
Personality and Interest Measures			
		Biographical Information Blank - Personal Relations	-.24**
		Picture Arrangement Test - Self-Confidence	-.19*
Value Orientation and Preference Measures			
Job Orientation Inventory - Providing for Family	-.19*	Survey of Work Values - Extrinsic Orientation	-.20*
Work Itself/ Work Environment - Preference for Pay	-.19*	Job Orientation Inventory - Extrinsic Orientation	-.19*

[1]Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 118$.

* $p < .05$.

** $p < .01$.

*** $p < .005$.

Table 3 presents the associations found for analysis of preference for responsibility as a job attribute. Inspection of the results of that analysis provides strong support for responsibility being considered an intrinsic attribute of work. Both measures of preference for responsibility show positive associations with the Protestant Ethic Scale, with upward striving as measured by the Survey of Work Values, with intrinsic orientation as measured by three instruments: the Survey of Work Values, the Job Orientation Inventory, and the Job Attitude Survey.

While the two measures of preference for responsibility showed good convergence in terms of association with other measures, we find a very different outcome for the measures of preference for learning new skills. As can be seen from Table 4, preference for learning new skills, as measured by the Attribute Preference Scale, is strongly associated with several ability measures including both verbal and numerical intelligence and field-independent perceptual style. On the other hand, this same preference, as measured by the Work Itself/ Work Environment Questionnaire, shows no significant correlations with any ability measures. Here, again, we find fairly strong support, at least for this subject population, that learning

Table 3

Correlations[1] of Two Alternative Measures of Preference For Responsibility with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[2]	
Variable	r	Variable	r
Personality and Interest Measures			
		Biographical Information Blank-Personal Effort	.22*
		Biographical Information Blank-Personal Relations	.27**
Value Orientation and Preference Measures			
Protestant Ethic - Agreement	.28**	Protestant Ethic-Agreement	.22*
Survey of Work Values-Upward Striving	.19*	Survey of Work Values-Upward Striving	.19*
Survey of Work Values-Activity Preference	.28**	Survey of Work Values-Job Involvement	.21*
Survey of Work Values-Pride in Work	.20*	Survey of Work Values-Intrinsic Orientation	.21*
Survey of Work Values-Intrinsic Orientation	.29**	Job Orientation Inventory-Achievement	.22*
Job Orientation Inventory-Achievement	.33***	Job Orientation Inventory-Intrinsic Orientation	.21*
Job Orientation Inventory-Growth	.20*	Job Attitude Survey-Intrinsic Orientation	.24*
Job Orientation Inventory-Job Security	-.20*		
Job Orientation Inventory-Supporting Hobbies	-.23*		
Job Orientation Inventory-Intrinsic Orientation	.27**		
Job Attitude Survey-Intrinsic Orientation	.24**		
Work Itself/Work Environment-Attention Preference	.20*		

[1] Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 118$.

* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .005$.

Table 4

Correlations[1] of Two Alternative Measures of Preference For Learning New Skills with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[3]	
Variable	r	Variable	r
Ability Measures			
Wesman-Verbal	.41***		
Wesman-Numeric	.29*		
Wesman-Total	.40***		
Rod-and-Frame Test	-.49***		
Embedded Figures Test (Reciprocal)	-.44***		
Personality and Interest Measures			
Picture Arrangement Test-Happiness	-.34*	Biographical Information Blank-Personal Effort	.18*
Picture Arrangement Test-Negative Work Attitude	.31*		
Work Orientation and Preference Measures			
Orientation Inventory-Self	-.32*	Job Orientation Inventory-Job Security	-.21*
Job Orientation Inventory-Achievement	.27*	Job Orientation Inventory-Providing for Family	-.18*
Job Orientation Inventory-Growth	.37**	Job Orientation Inventory-Intrinsic Orientation	.20*
Job Orientation Inventory-Recognition	-.43***	Job Attitude Scale-Intrinsic Orientation	.32***
Work Itself/Work Environment-Preference for Variety	.30*		
Work Itself/Work Environment- Preference for Job Complexity	.31*		

[1] Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 60$.

[3] $n = 118$.

* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .005$.

new skills is an attribute intrinsic to the job, as evidenced by the positive correlations with the Intrinsic Orientation scales from both the Job Orientation Inventory and the Job Attitude Scale for the Work Itself/Work Environment Questionnaire and positive association with achievement, negative association with recognition, and negative association with self-orientation for the measure taken from the Attribute Preference Scale.

Summaries of similar analyses for preference for feedback (Table 5), preference for job complexity (Table 6), and preference for independence (Table 7) are also presented. Of particular interest in these analyses are the results for job complexity, where we find that the association with this variable, as measured by the Work Itself/Work Environment Questionnaire, is related to intellectual ability and field-independence, whereas as measured by the Attribute Preference Scale, it appears to be associated with factors such as preference for learning new skills, preference for attention, intrinsic interest, and preference for responsibility. Finally, in Table 7, it appears that preference for variety is positively related to preference for independence, whereas preference for learning new skills, responsibility, and job complexity all appear to be negatively associated with preference for independence.

Table 5

Correlations[1] of Two Alternative Measures of Preference For Feedback with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[3]	
Variable	r	Variable	r
Ability Measures			
		Wesman-Numeric	.25**
		Wesman-Total	.23*
Value Orientation and Preference Measures			
Job Orientation Inventory-Responsibility	-.42***	Protestant Ethic-Agreement	.25**
Job Orientation Inventory-Status	-.45***		
Job Orientation Inventory-Job Security	.27*		
Work Itself/Work Environment- Preference for Physical Working Conditions	.31*		

[1] Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 60$.

[3] $n = 118$.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .005$.

Table 6

Correlations[1] of Two Alternative Measures of Preference for Job Complexity with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[3]	
Variable	r	Variable	r
Ability Measures			
		Wesman-Verbal	.26**
		Wesman-Numeric	.23*
		Embedded Figures Test (Reciprocal)-	-.24**
Personality and Interest Measures			
		Biographical Information Blank- Self-Confidence	.23*
Value Orientation and Preference Measures			
Attribute Preference Scale- Responsibility	.31*	Job Orientation Inventory- Interpersonal Relations	-.20*
Job Attitude Scale- Intrinsic Interest	.29*		
Work Itself/Work Environment- Preference for Attention	.29*		
Work Itself/Work Environment- Learning New Skills	.26*		

[1] Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 58$.

[3] $n = 118$.

* $p \leq .05$.

** $p \leq .01$.

*** $p \leq .005$.

Table 7

Correlations[1] of Two Alternative Measures of Preference For Independence with Other Variables

As Measured by the Attribute Preference Scale[2]		As Measured by the Work Itself/ Work Environment Questionnaire[3]	
Variable		Variable	r
Ability Measures	r		
		Embedded Figures Test- (Reciprocal)	-.18*
Personality and Interest Measures			
Biographical Information Blank- Career Motivation	.35**	Biographical Information Blank- Personal Effort	.21*
		Picture Arrangement Test- Self-Confidence	-.27**
Value Orientation and Preference Measures			
Job Orientation Inventory- Interpersonal Relations	.30	Job Orientation Inventory- Providing for Family	-.21*
Attribute Preference Scale- Variety	.51***		
Job Attribute Scale- Extrinsic Interest	.27*		
Work Itself/Work Environment- Learning New Skills	-.28*		
Work Itself/Work Environment- Responsibility	-.27*		
Work Itself/Work Environment- Job Complexity	-.33*		

[1]Only correlations reaching significance at or beyond the .05 level are reported.

[2] $n = 58$.

[3] $n = 118$.

* $p < .05$.

** $p < .01$.

*** $p < .005$.

Prior to the present study, similar research was conducted with Naval monitoring and maintenance personnel (Barrett, Bass, O'Connor, Alexander, Forbes, & Cascio, 1975). As a part of that field study, data were collected on the Attribute Preference Scale, Biographical Information Blank, Survey of Work Values, Maudsley Personality Inventory, and several aptitude/abilities measures used as a standard part of the Naval selection and classification test battery. Table 8 presents a selected summary of the correlations between preferences for job attributes and other variables. As can be seen, the congruence of the earlier reported results for college students and the results for Naval personnel is quite good. For example, Table 8 shows several abilities to be positively related to preference for variety and preference for learning new skills for the Naval sample. Similar results were found for the college sample (Tables 2 and 4).

The final analysis consisted of investigating the intercorrelations between measures of the same construct taken from different instruments. These results for preferences for job structural attributes are presented in Table 9 and for intrinsic and extrinsic orientation in Table 10.

Inspection of Table 9 shows that preferences for the six job structural attributes which were measured by both the Attribute Preference Scale and the Work Itself/Work Environment Questionnaire show uniformly low, nonsignificant correlations. Comparison with

Table 8

Correlations of Attribute Preference Scale Values

and Other Variables for Naval Monitoring and Maintenance Personnel

	r (n)
Preference for Variety:	
General Classification Test:	
Verbal Aptitude	.31 (79)**
Preference for Responsibility:	
Biographical Information Blank:	
Career Motivation	.41 (29)*
Survey of Work Values:	
Intrinsic Orientation	.29 (45)*
Preference for Learning New Skills:	
Arithmetic Reasoning Test	.31 (42)*
Mechanical Understanding Test	.24 (45)*
Survey of Work Values:	
Pride in Work	.28 (45)*
Preference for Independence:	
Biographical Information Blank:	
Career Motivation	.29 (29)*

*$p < .05$.

**$p < .01$.

Table 9

Correlations Between Similar Constructs as Measured by the Attribute Preference Scale and the Work Itself/Work Environment Questionnaire

Preference for:	r+	n
Variety	.16	118
Responsibility	.02	118
Learning New Skills	-.01	60
Feedback	.16	60
Complexity	.06	58
Independence	-.22	58

+Note. All correlation coefficients are non-significant.

Tables 2 through 7 show that in several cases correlations with other preferences from the alternate scale are significant. For example, preference for learning new skills as measured by the Attribute Preference Scale (Table 4) is significantly correlated with preferences for both variety ($\underline{r}$ = .30, $\underline{p} \leq .05$) and complexity ($\underline{r}$ = .31, $\underline{p} \leq .05$) as measured by the Work Itself/Work Environment Questionnaire.

Examination of the multi-trait/multi-method correlations for intrinsic and extrinsic orientation in Table 10, shows that the Job Orientation Inventory and Job Attribute Scale have good convergent validity for both intrinsic ($\underline{r}$ = .44, $\underline{p} \leq .001$) and extrinsic ($\underline{r}$ = .46, $\underline{p} \leq .001$) orientation. The discriminant validity results for these two measures are also of interest. The hetero-method correlations show good discriminations for both constructs (significantly negative $\underline{r}$ = -.44 and -.46, $\underline{p} \leq .001$) while the within instrument correlations reflect the ipsative nature of the scales ($\underline{r}$ = -1.0, -.97). The Survey of Work Values is consistently weaker (at least in relation to the other two indices of work orientation) for both construct validity and ability to discriminate intrinsic from extrinsic orientation.

Discussion

The principle focus of this study was the investigation of alternate measures of both job structural attribute preferences

Table 10

Correlation Among Alternate Measures of Intrinsic and Extrinsic Orientation as Measured by the Survey of Work Values (SWV), Job Attitude Scale (JAS), and Job Orientation Inventory (JOI

	Intrinsic Orientation	
	SWV	JAS
JAS	.24**	
JOI	.34***	.44***

	Extrinsic Orientation	
	SWV	JAS
JAS	.24**	
JOI	.07	.46***

Intrinsic vs. Extrinsic Orientation

		Intrinsic		
		SWV	JAS	JOI
Extrinsic	SWV	-.16	-.24**	-.03
	JAS	-.24**	-.99	-.44***
	JOI	-.33***	-.46***	-.97

**$p \leq .01$.

***$p \leq .005$.

and intrinsic versus extrinsic orientation to sources of job rewards with a view toward assessing instrument properties and providing direction for future improvement of such measures.

Of the three instruments used in this study for the measurement of work orientation, the Job Orientation Inventory and Job Attitude Scale show reasonable agreement for both intrinsic and extrinsic orientation while the Survey of Work Values shows poorer convergent-discriminant validity. The results for these first two measures also reflect their ipsative nature in the near perfect negative correlations between the two orientation measures taken by the same test. That the convergent validity coefficients for these two instruments is not higher indicates that each may be tapping some part of the constructs not being assessed by the other. Thus, some combination of the two scales may provide an even better measure than either by itself. Research is presently underway to assess this possibility.

The strikingly consistent low relationships among the two measures of preferences for job structural attributes serves to underscore the very different orientation that each takes to the measurement of the constructs. The Work Itself/Work Environment Questionnaire asks for preference responses regarding a large number of isolated attributes. The Attribute Preference Scale,

on the other hand, attempts to assess the relative preference for various combinations of attributes. These conceptual and methodological differences between the two instruments, the consistency of preliminary results between Naval employees and laboratory subjects, and the lack of significant sex differences on the Attribute Preference Scale, provide initial evidence for the potential usefulness of the Attribute Preference Scale. Research is presently underway to investigate further improvements in format, administration and scoring of this instrument as well as additional study into its psychometric properties.

Previous studies of job structural attributes imply that such attributes are independent of other psychological characteristics. The present study indicates that job structural attributes, such as preference for learning new skills, preference for variety, and preference for job complexity, are related to ability measures while preference for responsibility appears to be more closely related to value orientations. Further conceptualization of the job design should take into account the fact that preferences for job structural attributes are not independent of abilities nor are they determined largely by an intrinsic or extrinsic orientation.

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